

IN THE CLAIMS

1. (Currently Amended) A method for data processing comprising:

~~receiving a data request at a data center, the request received from a client computer requesting data;~~

receiving from a cache server in a data center an initial request message, the initial request message including a request for data and requesting permission to forward the request for data to an origin server;

determining whether the origin server is available to process the request;

determining a state associated with the request to send data to the client computer for data in response to the origin server not being available to process the request for data;

assigning a priority to the request for data according to the state associated with the request and according to priority criteria associated with the state in response to the origin server not being available to process the request for data;

~~automatically adjusting the priority criteria;~~

~~dynamically updating the priority of the request to send data to the client computer in response to the adjusted priority criteria;~~

queuing the request for data as a function of the priority associated with the request in response to the origin server not being available to process the request for data;  
and

determining that the origin server becomes available to process the request for data;

returning the request for data and a permission indicator to the cache server in order to retrieve retrieving the requested data from an associated with the request for data from the origin server for delivery to a client computer.

2. (Currently Amended) The method for data processing according to Claim 1, ~~wherein the data center comprises a cache server, a flow control server and a web server~~ further comprising:

automatically adjusting the priority criteria;

dynamically updating the priority of the request to send data to the client computer in response to the adjusted priority criteria.

3. (Currently Amended) The method for data processing according to Claim 1 further comprising:

determining a load associated with the origin server;

~~controlling at a flow control server retrieval of data from the origin server by a cache server;~~

granting permission ~~from the flow control server~~ to the cache server to retrieve data when the load associated with the origin server is below a threshold; and

denying permission ~~from the flow control server~~ to the cache server to retrieve data when the load associated with the origin server is above the threshold.

4. (Original) The method for data processing according to Claim 3, wherein the threshold is determined as a function of the load of the origin server.

5. (Canceled).

6. (Currently Amended) The method for data processing according to Claim 1 further comprising instructing the cache server to communicate ~~communicating~~ alternate content to the client computer ~~requesting data~~, the alternate content comprising a status page, the status page comprising an automatic re-submission time for re-issuing the request.

7. (Previously Presented) The method for data processing according to Claim 6, wherein the alternate content comprises the status page and wherein the status page is communicated when the load at the origin server exceeds a predetermined threshold.

8. (Currently Amended) The method for data processing according to Claim 6, wherein communicating the alternate content comprises:

associating a queue delay time with the request for data;  
determining whether the queue delay time exceeds a threshold;

~~generating the alternate content as a function of predetermined criteria associated with the origin server when the queue delay time exceeds the threshold; and~~

instructing the cache server to return ~~returning~~ the alternate content to the client computer in response to the queue delay time exceeding the threshold.

9. (Currently Amended) The method for data processing according to Claim 8, wherein the ~~data request~~ for data is generated at the client computer remote from the data center and wherein generating the alternate content comprises ~~selecting~~ instructing the cache server to select the alternate content as a function of the bandwidth available to the client computer.

10. (Currently Amended) The method for data processing according to Claim 9, ~~wherein generating the alternate content~~ further ~~comprises~~ comprising determining the amount of bandwidth available to the client computer, wherein the amount of bandwidth comprises one of high-bandwidth, medium-bandwidth and low-bandwidth.

11. (Currently Amended) The method for data processing according to Claim 8, wherein the cache server is instructed to return ~~generating the alternate content further comprises~~ ~~generating~~ the alternate content based on the queue delay time and the predetermined criteria.

12. (Currently Amended) The method for data processing according to Claim 8, wherein the predetermined criteria comprises information associated with the request for data.

13. (Original) The method for data processing according to Claim 8, wherein the predetermined criteria comprises external information associated with a user associated with the request.

14. (Currently Amended) The method for data processing according to Claim 13, wherein the external information comprises historical shopping information associated with the user associated with the request for data.

15. (Previously Presented) The method for data processing according to Claim 6, wherein the alternate content comprises the status page and further including resubmitting the data request to the data center by a browser to update the status page.

16. (Currently Amended) The method for data processing according to Claim 15, wherein resubmitting the ~~data~~ request for data is performed automatically by the browser.

17. (Currently Amended) The method for data processing according to Claim 1, wherein assigning the priority to the request for data comprises determining whether the request for data is prioritizable, and wherein the priority is a first priority when the request for data is non-prioritizable and wherein the priority is a second priority when the request for data is prioritizable.

18. (Currently Amended) The method for data processing according to Claim 17, wherein the first priority is a default priority and wherein the second priority is determined as a function of the data requested by the ~~data~~ request for data.

19. (Original) The method for data processing according to Claim 1 further comprising determining the load on an origin server by comparing a load metric associated with the origin server to a predetermined threshold.

20. (Original) The method for data processing according to Claim 19, wherein the load metric comprises the number of requests being handled by the origin server.

21. (Original) The method for data processing according to Claim 19, wherein the load metric comprises the number of network connections being supported by the origin server.

22. (Original) The method for data processing according to Claim 19, wherein the load metric comprises the delay associated with retrieving a predetermined web page from the origin server.

23. (Currently Amended) The method for data processing according to Claim 1, wherein the request for data is a first request for data and wherein queuing the request for data comprises:

storing the first request for data in a queue associated with the data center, the queue having therein a plurality of second requests for data distinct from the first request for data, each of the second requests for data having a respective priority associated therewith;

sorting the queue as a function of the respective priority associated with the first request for data and each of the second requests for data; and

~~wherein retrieving the requested data comprises:~~

processing the highest priority request for data in the queue ~~by the origin server.~~

24. (Currently Amended) The method for data processing according to Claim 1, wherein the data center comprises a plurality of data centers and wherein receiving the request for data comprises:

determining a network distance between the client computer and at least one of the data centers;

determining the closest data center to the client computer;

resolving a destination address associated with the request for data to the closest data center; and

routing the request for data to the closest data center.

25. (Currently Amended) A system for dynamic flow control comprising:

a cache server operable to receive a request for content and retrieve content from an origin server in response thereto, the request received from a client computer requesting the content; and

a flow control server having an associated queue and coupled to the cache server, the flow control server operable to:

receive an initial request message from the cache server, the initial request message including a request for data and requesting permission to forward the request for data to an origin server;

determine whether the origin server is available to process the request;

determine ~~determining~~ a state associated with the request ~~to send data to the client computer for data in response to the origin server not being available to process the request for data;~~

assign a priority to the request ~~for data~~ according to the state associated with the request ~~for data~~ and according to priority criteria associated with the state ~~in response to the origin server not being available to process the request for data;~~

~~automatically adjusting the priority criteria;~~

~~dynamically update the priority of the request to send data to the client computer in response to the adjusted priority criteria;~~

store the prioritized request ~~for data~~ in the queue as a function of the priority associated with the request ~~for data in response to the origin server not being available to process the request for data; and~~



~~regulate the retrieval of content from the origin server by the cache server~~

determine that the origin server becomes available to process the request for data;

return the request for data and a permission indicator to the cache server in order to retrieve ~~retrieving~~ the requested data from an associated with the request for data from the origin server for delivery to a client computer.

26. (Currently Amended) The system for dynamic flow control according to Claim 25, wherein the ~~cache~~ flow control server is further operable to ~~request permission from the flow control server to retrieve content from the origin server~~ automatically adjust the priority criteria;

dynamically update the priority of the request for data to send data to the client computer in response to the adjusted priority criteria.

27. (Currently Amended) The system for dynamic flow control according to Claim 25, wherein the flow control server is further operable to associate a priority with the request for data based on the content requested by the request for data and determine a processing load associated with the origin server.

28. (Currently Amended) The system for dynamic flow control according to Claim 25, wherein the flow control server is further operable to associated a priority with the request for data based on external information associated with the request for data.

29. (Currently Amended) The system for dynamic flow control according to Claim 28, wherein the external information comprises historical information associated with a user associated with the request for data.

30. (Currently Amended) A method for dynamic flow control comprising:

receiving a data request for data at ~~a flow control server~~, the request for data received from a client computer requesting data;

determining a state associated with the request for data in response to a protected source not being available to process the request for data ~~to send data to the client computer~~;

associating a priority with the data request for data according to the state associated with the request for data and according to priority criteria associated with the state in response to the protected source not being available to process the request for data;

~~automatically adjusting the priority criteria;~~

~~dynamically updating the priority of the request to send data to the client computer in response to the adjusted priority criteria;~~

storing the data request for data in a queue as a function of the priority associated with the data request for data in response to the protected source not being available to process the request for data; and

returning the request for data and a permission indicator for retrieving the data requested by the data request for data from the from a protected resource in response to the protected source becoming available to process the request for data.

31. (Currently Amended) The method for dynamic flow control according to Claim 30 further comprising determining a load at the protected resource, and wherein associating a priority with the ~~data~~ request for data comprises associating the priority with the ~~data~~ request for data when the load at the protected resource exceeds a predetermined threshold and wherein ~~queuing the data~~ storing the request for data comprises queuing the ~~data~~ request for data when the load at the protected resource exceeds the predetermined threshold.

32. (Previously Presented) The method for dynamic flow control according to Claim 31 further comprising indicating status information to be returned to the client computer requesting data.

33. (Previously Presented) The method for dynamic flow control according to Claim 31 further comprising indicating alternate content to be returned to the client computer requesting data.

34. (Previously Presented) The method for dynamic flow control according to Claim 33 further comprising determining the alternate content as a function of the bandwidth associated with the client computer.

35. (Original) The method for dynamic flow control according to Claim 32, wherein the status information comprises a status web page and wherein indicating status information comprises selecting the status page based on priority criteria associated with the protected resource.

36. (Currently Amended) The method for dynamic flow control according to Claim 35 further comprising resubmitting

the data request after a predetermined time interval ~~to the~~  
~~flow control server.~~

37. (Original) The method for dynamic flow control according to Claim 36, wherein resubmitting the data request is performed automatically.

38. (Original) The method for dynamic flow control according to Claim 35 further comprising delaying communication of the status page indication for a predetermined time interval based on the priority criteria.

39. (Original) The method for dynamic flow control according to Claim 38, wherein delaying communication of the status page comprises delaying communication of the status page indication based on an expected delay associated with the protected resource.

40. (Currently Amended) The method for dynamic flow control according to Claim 31, wherein receiving the data request for data comprises receiving the data request for data from a flow controlled device.

41. (Currently Amended) The method for dynamic flow control according to Claim 31, wherein returning ~~retrieving~~ ~~the data requested by the data request~~ for data comprises:

removing at least one prioritized data request for data from the queue when the load at the protected resource is below the predetermined threshold;

communicating the at least one removed prioritized data requests request for data to the protected resource;

retrieving the requested data from the protected resource; and

communicating the requested data to a flow controlled device associated with the ~~data~~ request for data.

42. (Currently Amended) The method for dynamic flow control according to Claim 41, wherein removing at least one prioritized ~~data~~ request for data comprises removing the highest priority ~~data~~ request for data.

43. (Currently Amended) The method for dynamic flow control according to Claim 41, wherein associating the priority with the request for data comprises determining whether the request for data is prioritizable, and wherein the priority is a first priority when the request for data is non-prioritizable and wherein the priority is a second priority when the request for data is prioritizable.

44. (Currently Amended) The method for data processing according to Claim 43, wherein the first priority is a default priority and wherein the second priority is determined as a function of the request for data.